Sandy-Remote Analysis Area
Environmental Assessment

Myrtlewood Resource Area

Coos Bay District

EA Number OR 128-96-21

TABLE OF CONTENTS

MAPS

APPENDIX

Analysis File - available at the Coos Bay District Office

I. PURPOSE AND NEED FOR ACTION

The Bureau of Land Management (BLM) proposes to implement forest management activities in the Sandy-Remote Analysis Area. The analysis area is approximately 30 miles southeast of Coos Bay, Oregon near the town of Remote. It includes the Sandy Creek and Remote Subwatersheds that are tributary to Middle Fork Coquille River. The total analysis area is 23,982 acres in size. BLM manages 43% of the analysis area and is the sole federal land manager. The proposed harvest activities are located in T.28S., R.10W., Secs. 34 and 35; T.29S., R.10W., Secs. 1, 2, 3, 9, 15, 16, 17, 18, 20, and 28; T.29S., R.11W., Sec. 25; T.30S., R.10W, Secs. 5, 6, and 7; Willamette Meridian of Coos County.

The purpose of this Environmental Assessment (EA) is to analyze the effects of harvesting the estimated decadal Probable Sale Quantity (PSQ) for this analysis area and actions associated with the timber sales. By addressing the effects in one EA it was determined by the ID team that the cumulative effects to resources could best be analyzed in conjunction with the data from the Sandy-Remote Watershed Analysis. The Sandy-Remote Watershed Analysis is the third iteration for the Sandy Creek Subwatershed and the second iteration for the Remote Subwatershed.

The Proposed Action includes 628 acres of regeneration harvest, 133 acres of commercial thinning, and 6 acres of red alder conversion in the General Forest Management Area (GFMA). Planned harvest systems include ground-based, skyline, and helicopter yarding. The proposed projects would include the construction of 4 miles of road to be decommissioned or fully decommissioned, 30.3 miles of road renovation, and .9 miles of road improvement. Road closure recommendations would close 8.4 miles of existing roads. The proposed projects could be accomplished by multiple timber sale contracts sold in Fiscal Year (FY) 1997 and FY 1998.

Management goals for this area include:

* Address socio-economic commitment by promoting the production of merchantable timber through multiple timber sales from GFMA, while retaining some larger trees and snags to maintain forest health, productivity, and biological diversity.

* Increase the productivity of GFMA lands by thinning overstocked stands. Reset the vegetative trajectory of previously harvested stands to a desired condition.

* Renovate roads to meet water quality objectives.

* Manage road systems through road closures and decommissioning to maintain or improve wildlife habitats, water quality, and reduce the open road density.

Areas considered for timber harvest are outside of Late Successional Reserves (LSRs), Marbled Murrelet Reserves (MMRs), Connectivity Blocks, or Key Watersheds.

This EA is tiered to the *Final - Coos Bay District Proposed Resource Management Plan*, (FRMP, BLM, 1994), which is in conformance with the *Final Supplemental Environmental Impact Statement on Management of Habitat for the Late Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl* and its Record of Decision (ROD), (Northwest Forest Plan, Interagency, 1994).

This EA also conforms with the *Port Orford Cedar Management Guidelines*, (BLM, 1994); the *Western Oregon Program - Management of Competing Vegetation*, (FEIS, BLM, 1989); and the *Watershed Analysis for Sandy-Remote Analysis Area*, (BLM, 1996). Actions described in this EA are in conformance with the Aquatic Conservation Strategy Objectives listed on page B-11 and the Standards and Guidelines for Riparian Reserves on pages C-31 to C-37 of the Northwest Forest Plan.

These documents are available for review at the Coos Bay District Office of the BLM, North Bend, Oregon.

The Analysis File contains additional information used by the interdisciplinary team (IDT) to analyze impacts and alternatives and is hereby incorporated by reference.

Scoping

The scoping process identified the agency and public concerns relating to the proposed projects and defined the issues and alternatives that would be examined in detail in the EA. The general public was informed of the planned EA through letters to those on the Resource Area's mailing list and to those receiving the Coos Bay *Planning Update*. A copy of the scoping mailing list is in Section A of the Analysis File. There were two public responses.

Scoping by the IDT identified four issues.

Identified Issues

1. Landscape Pattern

   Key Indicators: Habitat connections
   Snag and upland down log availability

2. Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area[1]

   Key Indicators: Acres of regeneration harvest
   Acres of commercial thinning
   Estimated timber volume (thousand board feet)

3. Interim Riparian Reserve Functions

   Key Indicators: Surface erosion and mass wasting potential
   Large woody debris (LWD) recruitment potential
   Water temperature
   Riparian dependant/associated species

[1] The PSQ would contribute to the decadal PSQ for the Resource Area. This is not intended to be the PSQ that would be sustained in the Analysis Area for future decades.

4. Road Density

Key Indicators: Open road density
Impacts to resources

Management Opportunities

Adjust interim Riparian Reserve boundaries
Reduce road densities
Enhance stand characteristics
Manage Port-Orford Cedar root rot disease *(Phytophthera lateralis)* and noxious weeds
Maintenance of biological legacies
Redress impediments to stream flow posed by decadent stream crossings (old cat trails)
Support local economy through timber harvest

Issues Identified but Eliminated from Analysis

Fisheries
Special Status Species
Port-Orford Cedar root rot disease
Water Quality

Reasons for elimination are included in Section B of the Analysis File.

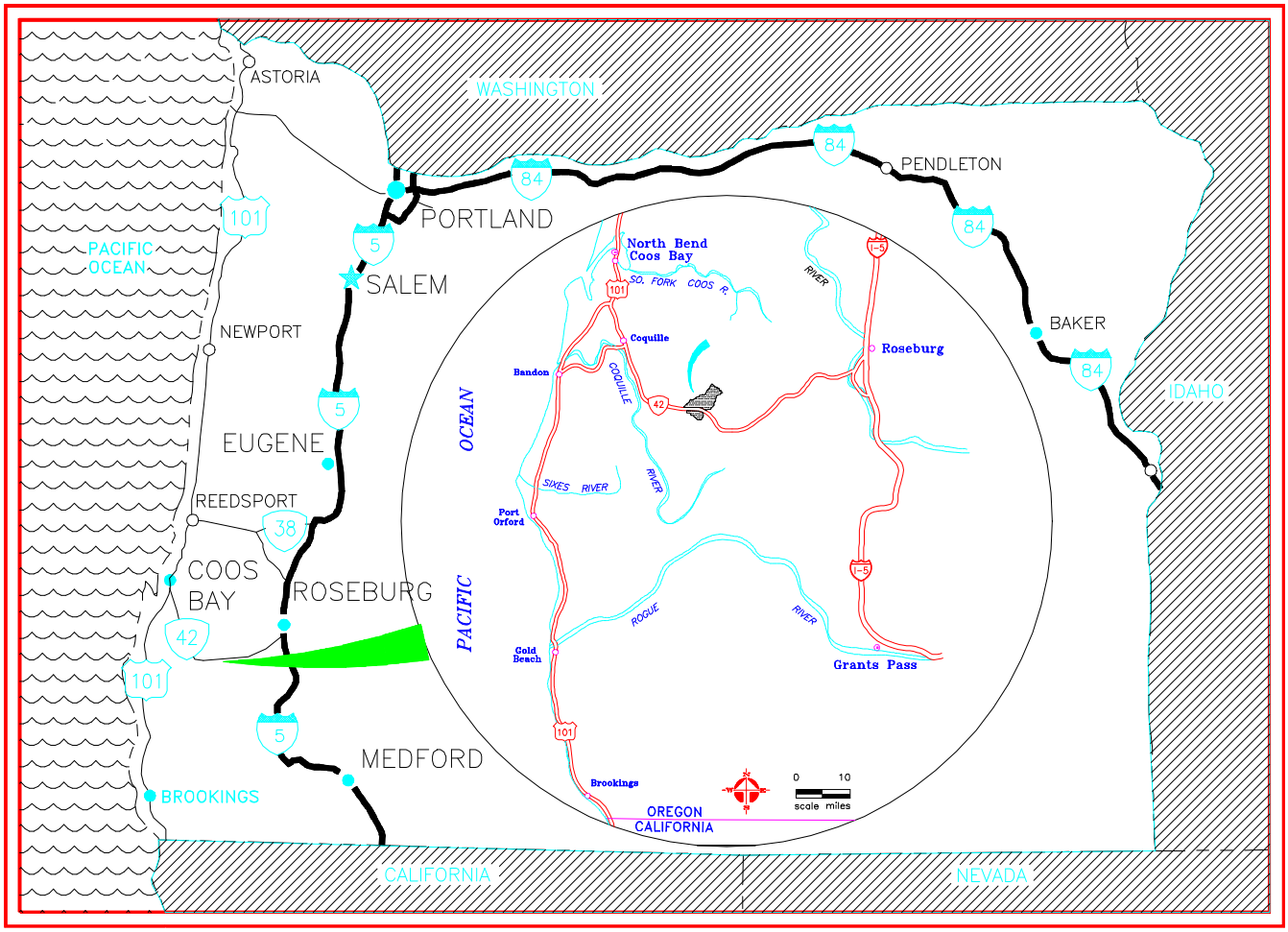
Alternatives Considered but Eliminated from Analysis

The ID Team considered an alternative of harvesting timber through multiple sales over the decade. This was eliminated because the ID Team determined they could better predict outcomes for cummulative effects if the actions was over a short period of time, allow the analysis to be more manageable, and manpower is limited to do this level of analysis for multiple enteries.

Vicinity Map

Sandy–Remote Analysis Area EA

Myrtlewood Resource Area
Coos Bay District BLM



II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

Process used to Formulate Alternatives

Two action alternatives were developed to address the issues and project goals. Review of existing data identified 302 acres of potentially thinnable stands and 1547 acres of potential regeneration harvest in the Sandy-Remote Analysis Area. This EA focused on potential harvest units identified in the Watershed Analysis. A map of the units not included in the action alternatives and rationale for their deferral can be found in Section C of the Analysis File.

The following is a partial list of reasons that potential stands were not included in the action alternatives:

Some units were deferred due to their ability to support adjacent Late Successional Reserves, and to provide connectivity and diversity within the drainage. They are also assumed to act as refugia and sources for recolonization for plant and animal species, and for the maintenance of natural processes which may be impaired in other parts of the drainage.

Some units were deferred due to previously unidentified streams and ponds located throughout them, which were found during field reviews.

Some potential commercial thinning units did not have stand densities conducive to thinning at this time and were deferred for future regeneration harvest.

Alternative I - No Action

Under this alternative no forest management activities would occur within the Sandy-Remote Analysis Area at this time. Other analysis areas would be proposed for forest management activities to meet the objectives of the GFMA as detailed in the FRMP.

Timber stands would continue to grow at natural rates. No timber harvest or road management activities would occur within this analysis area. The quantity, quality, and rate of change of wildlife habitat would not be altered. Potential for additional sediment delivery from non-surfaced roads and non-functioning culverts would remain.

Alternative II - Proposed Action

An interdisciplinary approach was used in developing this alternative to deal with the key issues identified. Selection criteria for the units in this alternative included maintaining important forest reserve areas. Biological legacies, such as large green trees, snags, coarse woody debris, would be retained or enhanced when possible. The design took into consideration the stand composition on BLM and private lands in the analysis area, as well as current BLM projects.

This alternative includes potential harvest units categorized as priority 1 in the Sandy-Remote Watershed Analysis. Watershed analysis identified Priority 1 potential harvest units as areas that were generally concentrated or located on forest edges to minimize further landscape fragmentation. These areas were located away from LSRs or MMRs. Important refugia and connecting habitats were left intact.

This alternative also adjusted Riparian Reserve boundaries on intermittent streams adjacent to (or included within) the proposed units. All perennial non fish-bearing streams retained the interim Riparian Reserve widths of 220 feet (one site potential tree height - see Section P of the Analysis File) on each side of the stream channels. All fish-bearing streams retained the interim Riparian Reserve widths of 440 feet on each side of the stream channels. Riparian Reserves on 29 intermittent streams were analyzed and adjusted to 110 feet each side of the stream channel, except in two cases: in one case the Riparian Reserve was adjusted to 120 feet on each side, and in the other case it was adjusted to 90 feet on each side. A total of approximately 67 acres of Riparian Reserve will be converted to GFMA through these modifications. Approximately 2 acres of GFMA was converted to Riparian Reserve. It was determined that in all cases, the adjustments met the Aquatic Conservation Strategy (ACS) Objectives. For details on Riparian Reserve adjustments, see Section O of the Analysis File.

Future stocking of regeneration harvest units would closely resemble the original stand species composition through planting and natural seeding.

Commercial thinning (CT) would retain approximately 90-120 trees/acre. Spacing would vary throughout the commercial thinning units. Hardwoods would be retained within the treated stands to the extent practicable. This alternative would treat (thin) 25 acres of Riparian Reserves[2]. Regeneration harvest would retain approximately 8 wildlife trees/acre. Skyline cable systems would be used for harvest of 24 units, combination of skyline and helicopter for 3 units, and helicopter yarding for 2 units. Approximately 6 acres in one CT unit and one acre in a regeneration unit would be harvested using a ground based system with designated skid roads.

This alternative could be accomplished through multiple timber sales in FY97, FY98, or FY99. Appendix 1 contains detailed unit descriptions.

Regeneration Harvest Acres (Skyline)	Regeneration Harvest Acres (Skyline/Heli)	Regeneration Harvest Acres (Helicopter)	Red Alder Conversion*	CT Acres	Total Acres	Total Volume (MBF)
544	58	26	6	133	761	31,586

CT - Commercial Thinnings
MBF - Thousand Board Feet
* Not included in the total acres or volume.

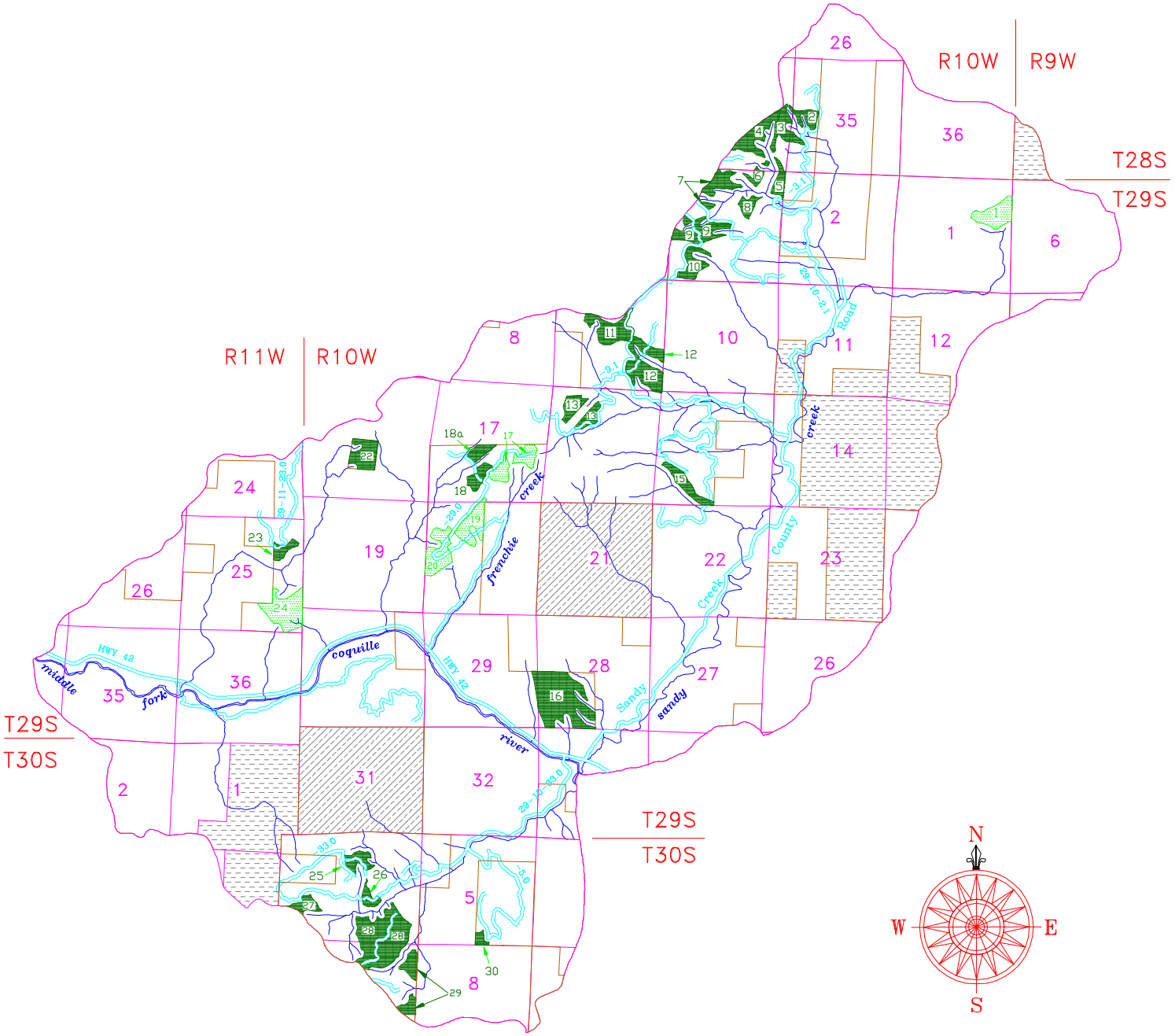
[2] This acreage is not reflected in the total harvest acres. Any volume removed would not count towards the PSQ as per page 13 of the FRMP.

N.C. - Rock Decom. (feet)	N.C. - Dirt Decom. (feet)	N.C. - Dirt Full Decom. (feet)	Road Improve. (Dirt) Decommission (feet)	Road Improve. (Dirt) Full Decommission (feet)	Road Renovation Gravel/Dirt (miles)	Road Miles To Be Closed*
7,900	6,400	6,850	3,500	1,000	30.3	8.4

N.C. - New Construction
Decom.- Decommission; Roads to be blocked and left in a condition to self maintain after completion of timber sale contract.
Full Decom. - Full Decommission; Roads to be decommissioned, subsoiled, and planted after completion of timber sale contract.
* - Existing roads closed under the Road Closure recommendations as identified in the Transportation Management Objectives (See Section D of the Analysis File)

SANDY–REMOTE ANALYSIS AREA EA

ALTERNATIVE II
PROPOSED ACTION



5 Proposed Regeneration Harvest Units

5 Proposed Commercial Thinning Units

Late Succesional Reserves(LSR)

Marbled Murrelet Reserve(MMR)

Existing Roads

Scale

3/4" = 1 Mile

Alternative III - Full Interim Riparian Reserves

The major difference between this alternative and Alternative II is that the Interim Riparian Reserves were not adjusted. As a result of this, additional units were added to meet the PSQ criteria. This alternative includes potential harvest units categorized as priority 1 and some categorized as priority 2 and 3 in the Sandy-Remote Watershed Analysis. Watershed analysis identified Priority 2 potential harvest units as areas that would have some adverse impacts to landscape fragmentation. These areas had higher fragmenting effects or were close enough to LSRs or MMRs to possibly lend late-successional habitat support to the nearby LSR or MMR. Priority 3 potential harvest units were identified as areas that would fragment existing stands, break important late-successional habitat near LSRs or MMRs. Deferring regeneration harvest in these areas was important to maintain options for possible future land use allocation changes which could better protect late-successional forest species.

This alternative was designed with full interim Riparian Reserve widths of 220 feet on each side of stream channels for all non fish-bearing streams and 440 feet on each side of fish-bearing streams. Approximately 2 acres of GFMA was converted to Riparian Reserve.

Future stocking of regeneration harvest units would closely resemble the original stand species composition through planting and natural seeding.

Commercial thinning (CT) would retain approximately 90-120 trees/acre. Spacing would vary throughout the commercial thinning units. Hardwoods would be retained within the treated stands to the extent practicable. This alternative would treat (thin) 30 acres of Riparian Reserves[3]. Regeneration harvest would retain approximately 8 wildlife trees/acre. Skyline cable systems would be used for harvest of 27 units, combination of skyline and helicopter for 3 units, and helicopter yarding for one unit. Approximately 6 acres in one CT unit and one acre in a regeneration unit would be harvested using a ground based system with designated skid roads.

This alternative could be accomplished through multiple timber sales in FY97, FY98, or FY99. Appendix 1 contains detailed unit descriptions.

Regeneration Harvest Acres (Skyline)	Regeneration Harvest Acres (Skyline/Heli)	Regeneration Harvest Acres (Helicopter)	Red Alder Conversion*	CT Acres	Total Acres	Total Volume (MBF)
561	54	18	6	128	761	31,527

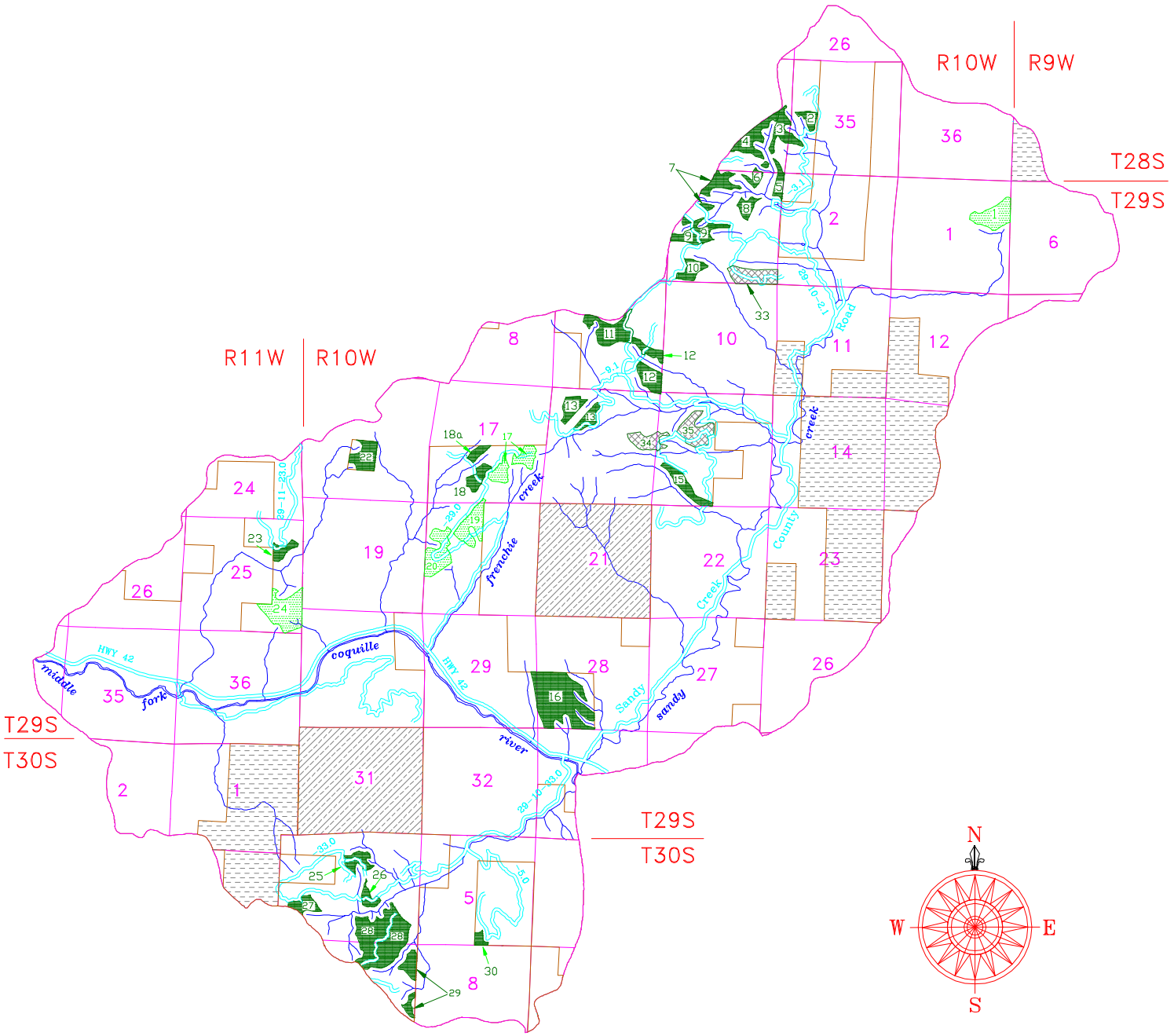
CT - Commercial Thinnings
MBF - Thousand Board Feet
* Not included in the total acres or volume.

[3] This acreage is not reflected in the total harvest acres. Any volume removed would not count towards the PSQ as per page 13 FRMP.

N.C. - Rock Decom. (feet)	N.C. - Dirt Decom. (feet)	N.C. - Dirt Full Decom. (feet)	Road Improve. (Dirt) Decommission (feet)	Road Improve. (Dirt) Full Decommission (feet)	Road Renovation Gravel/Dirt (miles)	Road Miles To Be Closed*
7,900	6,400	6,850	3,500	1,000	31.4	8.4

N.C. - New Construction
Decom. - Decommission; Roads to be blocked and left in a condition to self maintain after completion of timber sale contract.
Full Decom. - Full Decommission; Roads to be decommissioned, subsoiled, and planted after completion of timber sale contract.
* - Existing roads closed under the Road Closure recommendations as identified in the Transportation Management Objectives (See Section D of the Analysis File)

SANDY–REMOTE ANALYSIS AREA EA
ALTERNATIVE III
FULL INTERIM RIPARIAN RESERVES



Proposed Regeneration Harvest Units

Proposed Commercial Thinning Units

Proposed Regeneration Harvest Units Added for Alternative 3

Late Succesional Reserve(LSR)

Marbled Murrelet Reserve(MMR)

Existing Roads

Scale

3/4" = 1 Mile

Design Features for Action Alternatives

Design features include timber sale design, contract stipulations, and prescribed activities to be accomplished by the BLM or timber sale purchaser. The objective of these design features are to maintain or enhance the quality, quantity, and productivity of the resources in the project area.

- Require one-end suspension in all skyline units and areas yarded with ground-based equipment.

- For designated skid trails where ground-based harvesting is accomplished in regeneration harvest units, sub-soil trails after the completion of harvest activities and provide water bars as necessary.

- All trees designated for cutting in the commercial thinning units would be cut into lengths so as not to damage the residual stand.

- To minimize damage to residual trees in the commercial thinning units, do not allow falling and yarding between March 1 and June 30.

- Directionally fall trees away from all Riparian Reserves and use full suspension when yarding above stream channels. This will protect unstable banks during yarding and reduce the potential for sediment delivery to streams.

- In riparian treatment areas: maintain the current (existing) canopy closure within at least 30 ft. of all perennial surface water by implementing a 30 to 50-ft. no-cut buffer. This will protect stream canopies and banks.

- Harvest and reserve tree marking guidelines are outlined in Section I of the Analysis File.

- Leave all existing snags and upland down logs except where doing so would create a safety hazard.

- Wildlife trees should approximate the conifer tree species mix and ratios present in the units and where possible should be used near existing snags to protect that resource.

- All trees left in units have a specific role to fill through time; therefore wildlife trees and upland down logs should be retained in perpetuity (until naturally decomposed). There may be times when wildlife trees need to be exchanged and this would be done with input from the appropriate specialists.

- Approximately 70% of the wildlife trees should be in clumps 0.5-2.5 acres or greater. The remaining 30% should be scattered throughout the unit or in smaller clumps. Wildlife tree clumps should be centered around existing snags and upland down logs when possible. The intent is to have wildlife trees scattered throughout the unit in various size clumps and individually. Wildlife trees on the edge of the unit adjacent to forest are generally less valuable than wildlife trees in the middle of the unit or on the edge next to an adjacent clear-cut. Caution: Potential wind throw sites and areas near roads may need to be avoided or designed with clump size and shape to minimize future losses of vertical structure.

- Avoid marking wildlife trees within 100 feet uphill and 50 feet downhill of open roads to reduce theft or future inadvertent sale.

- Table 7 in Section I (of the Analysis File) summarizes the prescribed number of wildlife trees and snags to be created for each unit. Snags are to be created after site preparation.

- In designated units, top up to 1 wildlife tree/acre to create immediate snag habitat (see Table 7 in Section I of the Analysis File).

- Top one green conifer per acre within perennial Riparian Reserves and one green conifer per two acres within intermittent Riparian Reserves adjacent to Units 4, 7, 9, 10, 11, 12, 13, and 22 to reduce current deficiencies in hard snag and upland down log habitats.

- In Units 3 and 28, buffer the identified rock outcrops by a minimum of 250 feet on all sides to protect known bat roost sites in compliance with the Northwest Forest Plan ROD.

- Red tree vole protocol will be implemented when finalized.

- To avoid disturbance to peregrine falcons potentially nesting on the cliffs near Units 2,3, 4, 5, 6, & 8, no harvest-related activities should occur during the nesting season (approximately Feb 1 - July 31) unless protocol surveys can be completed documenting absence of nesting peregrine falcons.

- The prescription for site preparation will be determined after harvest. Alternative types of site preparation could include swamper burn, pile and burn, or broadcast burn. Broadcast burning should be considered only during moist seasons, such as early spring/winter.

- Prior to harvest, estimate which units will be expected to be broadcast burned. On units that are expected to burn hot enough to consume down logs or alter them through the loss of bark, additional coarse wood (up to 160 linear feet, minimum of 16" diameter and 16' long) will be prescribed (see Section I of the Analysis File).

- Units which are broadcast burned should be considered for future forage seeding.

- For units where slash is piled and burned, leave approximately 1 brush pile/5 ac unburned to serve as habitat for mammals (see Section I of the Analysis File).

- Gross yard hardwoods (5" in diameter and 6' in length, or greater) in Unit 16, the red alder conversion unit, and other units where falling and leaving hardwoods could limit planting.

- Roads: Specific treatments for road closures are identified in Appendix 2.

- Road construction and decommissioning: All roads designated for winter use must be surfaced with an approved rock lift. Construction activities would occur during summer or fall (prior to winter storm activity). Roads would be closed according to the Transportation Management Objectives (TMO) plan. Roads designated for summer use only in regeneration harvest units should be sub-soil tilled (using a winged ripper), grass seeded (in accordance with District Native Plant Restoration Policy), water barred (where appropriate) and blocked. All designated gravel roads should be blocked and left in a self-maintaining condition by removing culverts from stream crossings and installing water dips to channel unforeseen diversions from grade culverts.

- For roads to be fully decommissioned: remove fills and culverts at risk of failure; subsoil, waterbar, seed (see District native seed policy) and close all road surfaces.

- Use polyethylene culverts on all new construction and improvements when possible.

- Where practicable, remove decadent stream crossings from old haul routes associated with harvest units (e.g., Units 7, 12, &16). Spread fill materials on stable location and seed.

- When implementing the Port Orford Cedar Management Guidelines to reduce spread of *Phytophthora lateralis* (root rot) to Port Orford cedar (POC), do not harvest, cut, or otherwise remove POC from Riparian Reserves. Girdle only POC around infection centers within 25 ft. of streams within, or adjacent to, thinning units.

- Remove noxious weeds (gorse, scotch and french broom) along roads (within 12' slope distance from edge of the running surface, or the top of the cut slope and the bottom of the fill; whichever is less) designated for timber haul on BLM-administered lands.

- Protect genetic trees from harvest and pullback slash from these trees a distance of 25'.

- Best Management Practices (BMP's) would be followed as listed in Section H pages 69 - 74, Volume 2, Coos Bay District Final Proposed Resource Management Plan, 1994.

Monitoring

Monitoring guidelines are established in the 1995 FRMP/ROD, pp. L-3 & L-4, and the 1994 Standards and Guidelines, pp. E-1 to E-10. Implementation monitoring of the mitigation measures specific to Riparian Reserves will be carried out by the contract administrator and fisheries personnel. A sample of Riparian Reserves will be monitored before and after harvest to determine whether the mitigation measures were implemented.

A representative sample of streams that were classified as either perennial or intermittent based on biological indicators or physical criteria (as described in the Sandy-Remote Riparian Reserve Evaluation) will be re-evaluated in the August-September low-flow period to test the validity and accuracy of these techniques.

Coarse Woody Debris (CWD) will be monitored on at least 20% of the regeneration harvest acres to comply with the District standard as listed in the FRMP. In addition, specific monitoring of CWD contributed by topping trees will be done to quantify the amount of material meeting minimum standards contributed by this practice.

Bat roost sites in Units 3 and 28 will continue to be monitored for activity and for habitat parameter changes resulting from harvest activity. A monitoring plan will be developed in the future.

Post harvest and post site preparation monitoring of wildlife trees will be done. This monitoring should comply at a minimum with the District standard and with the Monitoring plan prepared for wildlife trees and snags. Monitoring should also include examining the mortality rates of retained trees within commercial thinnings (in particular within Frenchie Creek) to see if natural mortality after a thinning provides sufficient snags for that age class of forest or if further manipulation of trees should be done. A specific monitoring plan will be developed in the future.

Summary of Consequences

Consequence	Alternative I No Action	Alternative II Proposed Action	Alternative III Full SAT Interim Riparian Reserves
Landscape Pattern (Issue 1)			
Habitat connections	low	moderate	high
Snag/down log availability	high	moderate	moderate
Meeting the PSQ for the Myrtlewood Resource Area (Issue 2)			
Acres of regeneration harvest	0.00	628	633
Acres of commercial thinning	0.00	133	128
Estimated timber volume (MBF)	0.00	31,586	31,527
Interim Riparian Reserve Boundary Adjustments (Issue 3)			
Number of intermittent streams affected	0	29	0
Acres of Riparian Reserve reduced	0	67	0
Road Density (Issue 4)			
Open road density (Miles/Section)^2	3.21 north of Hiway 42 2.5 south of Hiway 42	2.75 north of Hiway 42 2.15 south of Hiway 42	2.75 north of Hiway 42 2.15 south of Hiway 42
Impacts to resources	Wildlife: low Fisheries: moderate Sediment Delivery: moderate Water Yield Increase: low	Wildlife: moderate Fisheries: low Sediment Delivery: low Water Yield Increase: low	Wildlife: high Fisheries: low Sediment Delivery: low Water Yield Increase: low

III. AFFECTED ENVIRONMENT

VEGETATION: The entire Sandy-Remote Analysis Area is in the Western hemlock vegetation series. At present, this area contains a dominant overstory of Douglas-fir. Other tree species found in the overstory are western hemlock, grand fir, western redcedar, Port-Orford cedar (POC), chinquapin, red alder, bigleaf maple, Pacific madrone, and tanoak. Understory species include the above mentioned tree species plus the following shrub and herb species: evergreen and red huckleberries, vine maple, rhododendron, salal, Oregon-grape, ocean-spray, Ceanothus, Oxalis, poison oak, and ferns.

Port-Orford cedar root rot *(Phytophthora lateralis)* occurs throughout the drainage, primarily along roads. The spread of the disease is influenced by human activities and natural events. Contributing human activities include motor vehicle use. Natural events include rainfall, water flow, movement of animals, and movement of soils by natural erosion. There is little probability of POC becoming extinct due to the disease. POC is a prolific seeder and produces seeds at an early age. Its population exhibits some resistance to the disease.

Noxious weeds, including French broom, Scotch broom, gorse, and tansy ragwort, are found in the area. Occurrences of broom are primarily along the Sandy Creek County Road, Sandy Creek Mainline, Highway 42, and Frenchie Creek road. Gorse in T.28S., R.10W., Section 34 has been removed and is being monitored for regrowth.

Most of the forested areas date back to a large fire that occurred in 1868. Two isolated pockets of old growth (birthdate 1700) survived. One stand is located adjacent to the Middle Fork Coquille River and the confluence of Frenchie Creek. The other stand is located in T.29S., R. 10W., Section 1. See the Sandy Remote Watershed Analysis for a more detailed description on vegetation and disturbance regimes.

WILDLIFE: Numerous species of wildlife are present in the analysis area The big game species include Roosevelt elk, blacktailed deer, black bear and mountain lion. The area also supports populations of furbearers such as mink, long-tailed weasel, beaver, and possibly American marten and fisher. Numerous species of birds include resident and neo-tropical migratory songbirds. Upland game birds include Ruffed Grouse, California Quail and Mountain Quail. Small mammals include several species of schrews, porcupines, brush rabbits, and squirrels, among others. Reptiles in the area include fence lizard, Western pond turtle, northern alligator lizard, and probably the rubber boa and two species of garter snake. Amphibians include southern torrent, clouded, Dunn's, western red-backed and Ensatina salamanders (See Wildlife Appendix C-1, Sandy-Remote Watershed Analysis for species list).

SOILS: The analysis area is predominately covered by five major soil types according to the Soil Survey of Coos County. These soils are of the Digger, Preacher, Blachly, Bohannon and Umpcoos types. All of these soils are derived from sedimentary or igneous rock and are found as colluvium and residuum. The general limitations that are most restrictive on these types are the susceptibility to erosion, the lack of available water at times of the year for plant growth, the susceptibility to compaction, and the competition for plant growth. Most of these soils have an associated risk from moderate to high when considering management activities, largely due to the slope and the erosion hazard.

GEOMORPHOLOGY/HYDROLOGY: The Sandy Creek subwatershed is 12,740 acres and Remote subwatershed is 11,242 acres for a total of 23,982 acres (37 sq. mi.). The Middle Fork Coquille River, occupies the lowest point of the landscape and lies generally at elevations between 100-220 feet through the analysis area. Tributary drainages, consist of narrow canyons with much steeper channel gradients, and drain rugged mountainous landforms, to 2800 feet. Tributary drainages in the analysis area include small frontals of the Middle Fork Coquille River, and larger 4-5th order watersheds. Drainage areas in descending order include Sandy, Middle Fork Coquille Frontals, Slide, Belieu, Anderson, Tanner and Frenchie Creeks. The drainage pattern is dendritic with a high drainage density of more than 6.25 mi/mi^2. About 283 miles of streams are found in the watersheds. First and second order streams comprise 79% of the total drainage density. These are generally steep headwaters channels draining small catchments. Many of the first order streams and some of the second order streams become intermittent by late summer. The remaining higher order streams (21% percent of the analysis area stream miles) are perennial, and usually have some live flow all year long.

The principal driver of hydrologic processes in the Sandy-Remote analysis area are low intensity rainstorms. Annual precipitation ranges from 55-70 inches, and varies strongly with elevation, with greater depths in the higher portions of the drainages. About 80% of the yearly precipitation total occurs between November-March. A high percentage of this rainfall (65% of annual precipitation) ends up as runoff due to the low water storage capacity of the shallow and coarse textured soils and impermeable underlying bedrock. Stream hydrographs for an individual storm have short lag times behind precipitation, show steep rising limbs, but more moderate recession. Flooding only occurs with very large prolonged storms, because much of the stream channel network is entrenched and lacks a floodplain. Debris slides/debris flows triggered by rainstorms and bankcutting by flashy runoff are processes contributing sediment to and through analysis area streams.

The drainages are not fully “hydrologically recovered” because 30% of the analysis drainages have forest stands that are under 15 years of age. Thus annual water yield is increased, and streamflows in the spring and fall are likely increased. Winter flows may have increased, decreased or stayed the same. Conversion from conifer to hardwood riparian tree species may be offsetting the yield increase, as transpiration is higher in the summer when flows are low.

FISHERIES: The Sandy-Remote Analysis Area supports populations of coho salmon, fall chinook salmon, winter steelhead, coastal cutthroat trout (resident and sea-run), Pacific lamprey, brook lamprey, speckled dace, prickly sculpin, and largescale suckers. Anadromous fish are known to spawn and rear only in the Sandy Creek drainage (below the cascades in T29S-R10W-2), and the Slide Creek drainage (below the falls in T29S-R10W-32), and the Middle Fork Coquille River. Resident cutthroat trout reside in Sandy, Frenchie, Tanner, Belieu, and Slide Creeks above and below anadromous fish barriers. All Oregon Coast stocks of wild coho salmon and steelhead are proposed for listing under the Endangered Species Act. Coho salmon and sea-run cutthroat trout are considered to be "at risk" of extinction in the Pacific Northwest.

RIPARIAN RESERVES: Riparian areas and streams on public lands primarily contain moderate amounts of soft (decay class 3+), imbedded, down logs from previous harvest activities and natural recruitment. However, nearly 3% of the Riparian Reserves on public lands will be at least 160 years of age at the end of this decade, and this is expected to increase to nearly 42% in the next 40 years. At approximately 160 years of age, trees reach a size that

contribute appreciably to large woody debris (LWD). Thus, natural recruitment of LWD on public lands is expected to increase in the near future and fill the void created as the current LWD decays. Approximately 40% of the Riparian Reserves are less than 40 years of age at present. In these stands, very few large class 1 logs will be recruited into streams within the next 120 years. Very few "hard" (class 1) down logs are present. With no treatments, the stands will "self-thin" over the next 40 years and begin to provide smaller pieces of class 1 logs to riparian forests and streams (average piece size 10-20 inches diameter).

IV. ENVIRONMENTAL CONSEQUENCES

Alternative I - No Action

Under this alternative, no management activities would take place within the analysis area at this time.

Direct and Indirect Effects

Landscape Pattern (Issue 1)

Key Indicator: Habitat connections
The existing landscape pattern is somewhat disturbed from past management and there is an abundance of brush in some units. Although this is not known to be detrimental to wildlife habitat, it is also not known to be beneficial. The ecological condition of these units is assumed to be out of normal trajectory, and keeping these units intact will retain this condition until a natural disturbance alters the site.

For the late-seral habitat related wildlife species, this alternative will likely benefit the habitat connections between forest reserves. Therefore, this alternative is expected to benefit these species in the short-term and the long-term periods.

Key Indicator: Snag and upland down log availability
There is a deficit of this resource throughout the analysis area (see tables C-3 through C-6, Sandy-Remote Watershed Analysis Appendix C: Wildlife). Significant amounts of CWD are not expected to be naturally recruited into many of these stands for approximately 30 to 40 years. This alternative is not expected to provide the fastest relief for the current deficit on many of the forest stands in the analysis area.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

No volume from this analysis area would contribute to the decadal PSQ for the Resource Area. Time and resource constraints hinder the completion of EA's for other analysis areas that would contribute to the PSQ for the next two fiscal years.

Interim Riparian Reserve (Issue 3)

No canopy would be harvested, girdled, or otherwise disturbed in the interim Riparian Reserves within the analysis area, and there should not be any direct or indirect effects on stream temperature, LWD recruitment, riparian dependent/associated species, or the surface erosion and mass wasting potential. The no action alternative would not affect the development of the 160 year-old age class in the Riparian Reserves.

Road Density (Issue 4)

Key Indicator: Open road density
The following table summarizes the effects of roads for all alternatives:

Table 1: Road Density

	Alt. I	Alt. II	Alt. III
Miles of new road construction[1]	0	4	4
Open Road Density on BLM north of Hiway 42 (Miles/Section)[2]	3.21	2.75	2.75
Open Road Density on BLM south of Hiway 42 (Miles/Section)[3]	2.5	2.15	2.15

[1] All new road construction will be fully decommissioned or decommissioned.
[2] Open roads = roads accessible to motorized vehicles. Target open road density in the FRMP is 1.1 miles/section with a maximum of 2.9 miles/section.
[3] Open roads = roads accessible to motorized vehicles. Target open road density in the FRMP is 2.9 miles/section.

Open road density in the analysis area would remain above the target of 1.1 miles/section and the maximum of 2.9 miles/section north of Highway 42, as stated in the FRMP. South of Highway 42, the road density would also remain as is, which currently meets the FRMP target.

Key Indicator: Impacts to resources
The high open road density north of Highway 42 would likely continue the current level of disturbance to wildlife, and could continue to discourage wildlife from using habitats near these open roads. No new roads would be constructed, so no new corridors or unnatural (graveled) surfaces would be created which would serve as barriers to movements. The overall effect of

this action to wildlife would be to continue the level of disturbance to wildlife and adverse impacts to wildlife habitat at the current estimated high level.

There is low potential for sediment delivery to streams to increase above existing levels in the short-term. The likelihood of additional short and long-term sediment delivery from culvert/fill failures on all non-maintained roads, and road-associated landsliding in general, increases over time. Under this alternative, none of the recommended road decommissioning or road surface/drainage improvements would be completed at this time. There would be no additional disturbance to old road surfaces, because no renovation would occur.

Indirect effects of road fill failures, debris torrents, and other road-related mass failures include increased water turbidity and accelerated sediment deposition in downstream reaches (from 1st-order tributaries to the lower Coquille River and estuary). There is a moderate risk of additional impact to fish habitat as a result of sediment delivery from surface and bank erosion and mass failures in this analysis area.

Cumulative Effects

Landscape Pattern (Issue 1)
Key Indicator: Habitat connectivity
In unmanaged stands, the development of habitat connections altered by past disturbances would progress at the current slow rate of change. Over time, this would likely result in the reestablishment of the resource values of many wildlife species and their habitats which existed prior to the last large-scale or stand-replacing event. However, many of the current habitat conditions are believed to need some form of disturbance to correct some past management activities and to completely reset the vegetative trajectory on those sites.

Key Indicator: Snag and upland down log availability
Many existing stands are currently deficient in both hard and soft snags, and upland down logs. Current deficiencies in hard snags and upland down logs are setting up future shortages in soft snags, and upland down logs. The No Action alternative will not address these shortages.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

Deferring harvest at this time may result in lost opportunities for commercial thinnings in some stands. Growth in some commercial thinning stands would be reduced due to competition, resulting in decreased long-term productivity. Some stands with an undesirable species mix would continue to grow on their present trajectory, minimizing the long-term potential productivity.

Interim Riparian Reserve Boundary Adjustments (Issue 3)

Key Indicator: Surface erosion and mass wasting potential
Cumulative effects of the no-action alternative on the surface erosion and mass wasting potential within the analysis area are not expected.

Key Indicator: LWD recruitment potential
For all alternatives: maturation of Riparian Reserves will generally enhance future LWD recruitment over time. However, the no-action alternative will not enhance the recruitment of LWD in overstocked stands less than 40 years of age in the near future.

Key Indicator: Water temperature
On BLM-administered lands in headwaters, development of riparian canopy in previously harvested stands should result in overall water temperature decline. However, the revised Oregon Forest Practice Rules do not require buffers on non fish-bearing streams. Thus, it is uncertain what the cumulative effects of recovery/growth of recently harvested riparian areas and future harvest on private lands under the revised Oregon Forest Practice Rules will have on water temperature in streams with input from private ownership. Higher stream temperatures on privately owned stream segments may counteract temperature declines in BLM lands.

Stream temperatures are above State criteria in the lower portions of Sandy Creek and the Middle Fork of the Coquille River. This situation will persist until these stream segments improve with respect to riparian vegetation and channel morphology.

Key Indicator: Riparian dependent/associated species
Maturation of Riparian Reserves should enhance the habitat of riparian dependent/associated plants and animals of concern[4] on BLM-administered lands. Populations of riparian dependent/associated species are expected to respond favorably to this enhanced habitat quality, within the limitations to dispersal imposed by the transportation system and checkerboard ownership pattern.

Road Density (Issue 4)

Key Indicator: Open road density
Road density would likely increase slightly on private land as new units are identified and harvested. The FRMP target would not be met within the area north of Highway 42 of the analysis area as a result of this alternative, because road densities on BLM would remain static and above target mileage levels. However, some reduction of road density could result from activities such as Job-in-the-Woods projects.

Key Indicator: Impacts to resources
Since there is no change in road density, wildlife resources will retain the current habitat effectiveness and road barrier impacts will be unchanged.

[4] "Species of concern" as used herein refers to the plant and animal species expected to benefit from Riparian Reserve protection, as determined through the Sandy-Remote Riparian Reserve Evaluation procedure.

Aquatic habitat has been altered throughout the Middle Fork Coquille River, including the Sandy-Remote Analysis Area, as a result of sediment delivery from road construction, timber harvest, stream cleaning, and other activities. Several perennial stream channels within the analysis area are currently layered with fine sediment (silt and sand). These conditions are likely to exist throughout the private and public land area that was tractor logged before 1980. High turbidity from fine sediment delivery is regularly noted in Sandy Creek during spawning surveys. Cumulative effects of past forest management in the analysis area have already contributed to the "at risk" status of fish stocks and poor stream habitat condition. Cumulative effects of sediment delivery as a result of the no action alternative have not been quantified at this time.

Alternative II - Proposed Action

Direct and Indirect Effects

Landscape Pattern (Issue 1)

Key Indicator: Habitat connections
The emphasis of this alternative was to set up a proposed harvest plan which harvested a target of 34 MMBF in the fewest possible units, keeping logical connections between LSRs and MMRs through the GFMA. There was also an attempt to ensure that the Riparian Reserve corridors (after adjustment) provided some connectivity between watersheds for species of concern or special status species. Although some of the desired habitat connections could not be made, this proposal should retain some of the best possible habitat connections within the GFMA during this decade.

The expected direct effect from the proposed action is some disturbance to the present pattern of habitat connections. This disturbance is expected to cause an adverse impact to some species of wildlife, including some of the special status species and other late seral habitat associates. These impacts are considered to be moderate compared to other possible harvest alternatives (including Alternative III) for the area. The resulting landscape pattern should provide connections to LSRs and other habitat reserves within the analysis area (see Wildlife Specialist's Report, Section F of the Analysis File).

Any late-seral habitat-related species would loose habitat within the GFMA. This would include groups of species including neo-tropical migratory birds, resident birds, herptiles and some mammals.

The indirect effect is likely to be long term enhancement of some habitats where inappropriate vegetative conditions caused by past management actions would be corrected. Commercial thinning techniques are planned to leave both structural and species diversity within the expected ranges for these forests. Some of the regeneration harvests are presumed to need vegetative disturbances to reset the vegetative trajectory. These two actions are likely to provide higher quality early and mid-seral habitats for those species which are expected to occupy the GFMA.

Key Indicator : Snag and upland down log availability
The analysis area is currently considered deficient in both hard and soft snags, and upland down logs. Wildlife tree retention would occur in all regeneration harvest treatment units, and is

intended to meet the minimum hard snag and upland down logs requirements after harvest. Actions in this alternative would provide snags and down wood structures within the harvest units and adjacent Riparian Reserves.

Thinning units are expected to meet minimum standards for hard snags, given the age of the stands, through natural and incidental mortality. These units are not expected to meet hard (upland) down log requirements in the near future because, most of the available material is of insufficient size. A modest increase in small diameter hard snag habitat is expected to improve habitat for wildlife associated with these structures, and would begin to alleviate future shortages of soft snag habitat.

Treatments of green conifers within Riparian Reserves would occur in areas adjacent to Units 4, 7, 9, 10, 11, 12, 13, and 22 to reduce current deficiencies in hard snags and contribute to upland down log habitat. In general, larger-sized snags and upland down logs accommodate the needs of a greater variety of species, therefore larger trees would be considered for treatment in these areas.

For the above treatment proposals, the overall direct affect would be to provide structure on the harvest units, and structures would be left in greater numbers than the minimum required by State of Oregon Forest Practices Act. The minimum number of structures required by the FRMP and Forest Plan is greater than what has been left on BLM-administered timber sales in the recent past. This number of structures should increase the amount of available cavity nester habitat. It is expected that this proposal provides at least the minimum adequate long-term numbers of structures for the wildlife resource need.

Indirectly, leaving these structures may change the fuel conditions and ignition potentials in the forest. The increase in snags and isolated large structures (wildlife trees) may increase the lightning strike potential on some areas of the analysis area. The average expected fire is small and of low intensity and would be a natural component of forest ecological community development. From a wildlife perspective, both the direct and indirect effects listed are beneficial to the forest.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

This alternative would provide an estimated timber volume of 31,586 MBF, which would contribute to the Resource Area's decadal PSQ commitment. Approximately 133 acres (of the 761 total acres treated) would be commercially thinned. These treatment acres would provide options in the near future that would not be available if thinning of these stands were defered.

Riparian Reserve Functions (Issue 3)

The modified Riparian Reserve network is designed to adequately protect aquatic resources and meet the ACS objectives (S&G's p. B-11), specifically with respect to protecting stream temperature, the sediment regime, LWD dynamics, and riparian dependent/associated species.

Key Indicator: Surface erosion and mass wasting potential
The proposed modification of Riparian Reserves on intermittent streams should not adversely affect the surface erosion or mass wasting potential. Surface erosion and mass wasting were modeled for the analysis area, and each site where boundary adjustments are proposed was carefully reviewed to ensure that areas with a high potential for surface erosion or mass wasting were incorporated into the Riparian Reserve.

Key Indicator: LWD recruitment potential
Research indicates that the vast majority (85-90%) of LWD in Oregon Coast Range streams is recruited from within 98 feet of the streambank. Thus, reducing the Riparian Reserve boundaries to one-half site potential tree height (110') may decrease the LWD recruitment potential by approximately 10% on the affected intermittent streams.

Some trees will be removed from the Riparian Reserves in conjunction with commercial thinning. An average of 115 trees per acre will be felled within Riparian Reserves adjacent to Units 17, 19, 20, and 24, most of which will be removed as part of the timber sale. However, a portion of the trees which are felled will be left to add class 1 material to the existing down woody debris, and improve the LWD loading in the streams associated with the thinning units.

Girdled POC will die and be recruited as LWD more rapidly than would occur with normal mortality from *Phytophthora lateralis*. In the long term (15+ yrs), growth rate of individual trees would increase in the thinned Riparian Reserves adjacent to Units 17, 19, 20, and 24; larger pieces of woody material would be contributed in a shorter period of time than would occur without thinning.

The proposed Riparian Reserve boundary adjustments would not alter the development of 160 year-old Riparian Reserves in the next twenty years, and would reduce the acreage accrued in the next forty years by less than 1%.

Key Indicator: Water temperature
Water temperature is not likely to be directly or indirectly affected by the harvesting proposed in Alternative II. Except for girdling of Port Orford cedar (POC; see next paragraph), and thinning in Riparian Reserves in Units 17, 19, 20, and 24, the current (existing) canopy closure will be maintained adjacent to all perennial streams. The Riparian Reserves on 29 intermittent streams within, or adjacent to, Units 2-4, 7, 9, 10, 16, 22, 25, 27, 28, and 30 would be modified to approximately ½ site-potential tree height (110'). A total of approximately 67 acres of Riparian Reserve will be converted to GFMA and approximately 2 acres of GFMA would be converted to Riparian Reserve through this modification. The resulting Riparian Reserves should moderate air temperatures in riparian areas and shade surface waters from solar radiation.

All infected POC within 25 ft. of intermittent and perennial streams in Units 17, 19, 20, and 24 will be girdled to control the spread of *Phytophthora lateralis* (root rot). Approximately 8,170 ft.

of streams (9.3 acres) will be directly affected by girdling of POC. This will result in removal of less than 10% of the riparian canopy (within 25 ft. of streams) in Units 17, 19, 20, and 24. This treatment should not affect water temperature in intermittent streams, and is not likely to increase water temperature in perennial streams above 64°F - the Oregon Dept. of Environmental Quality standard (Based on 3 years of water temperature monitoring of riparian treatments in John's Creek and Rock Creek).

Key Indicator: Riparian dependent/associated species
Alternative II would result in a reduction of 67 acres (approximately 1%) of the interim Riparian Reserve habitat available to riparian dependent/associated species. Specifically, the habitat directly affected will be the outermost (peripheral) 110' of the interim Riparian Reserve on 29 intermittent streams. The subset of riparian associated species of concern most likely to be directly affected by the loss of this portion of the interim Riparian Reserve includes Northern spotted owl, American marten, bats, and the those listed in the Botanist's report (Section N of the Analysis File). Alternative II would also indirectly impact the habitat of some riparian dependent species within the innermost 110' of Riparian Reserve, through edge effects (changes in humidity, temperature, light, and wind resulting from the close proximity of stand edges).

Based on the viability ratings for habitats of the botanical and wildlife species/groups, the narrowing of Riparian Reserves within the Sandy/Remote Analysis Area should have very little impact to any of these species (limited surveys indicate that no sites for any of the species of concern have been identified within the affected Riparian Reserves). The scale of the viability ratings is regional and the proposed narrowing of some Riparian Reserves at a local level should have minimal impacts to these species. Species which occur in the outer portions of the interim Riparian Reserves are most likely to be impacted from changing land use allocations from Riparian Reserve to GFMA.

<u>Road Density (Issue 4)</u>

Key Indicator: Open road density
This alternative reduces the open road density on BLM land from 3.21 to 2.75 miles/section, north of highway 42 in this analysis area (see Table 1). This will reduce the open road density below the maximum of 2.9 miles/section set for this area, and move the road density toward the target of 1.1 miles/section. The open road density will be reduced from 2.5 to 2.15 miles/section south of Highway 42, which meets the target of 2.9 miles/section for this portion of the analysis area.

Key Indicator: Impacts to resources
The decrease in open road density should result in less disturbance to big game, and should allow some increased utilization of available habitat by big game animals - elk in particular. The reduced open road density should also benefit other wildlife to which roads can present a barrier.

Roads will eventually revegetate when traffic is eliminated. This overgrown condition reduces barrier effects created by roads. Four miles of new road would be constructed, all of which would be either blocked, subsoiled, and planted (1.3 miles), or blocked and decommissioned to minimize erosion and sediment delivery (2.7 miles) after use. Approximately 220' of the

proposed new road construction will occur in Riparian Reserves (Unit 24). While the net affect to open road density of this new road construction is zero, the short term effect of the new roads will increase the amount of road surface which may present barriers to some small mammals, herptiles, and other animals. Closed roads which are not repeatedly opened for renewed access should reduce the expected long-term impacts as barriers and the components of increased disturbance.

The major impacts from existing roads occurred when they were built. This alternative proposes to reduce the number of open roads by installing barriers of different designs, and for a variety of expected durations. Barriers are expected to reduce the amount of public access, and should reduce disturbance to many species of wildlife (see Road Density discussion on Pages 95 & 96 of the Sandy-Remote Watershed Analysis). For roads that will be temporarily closed (gated), most forms of disturbance will continue due to administrative access and reduce the benefits of any proposed closure. Temporary closures are still likely to provide more unquantified benefits than if roads were never closed.

Sediment delivery is expected to be low and of short duration (1-5 years), because most of the proposed road construction are short spurs to landings on stable ridges and bench locations. Additionally, under Alternative II, 30.3 miles of road renovation is proposed, and drainage features will be improved on 0.9 miles of dirt road. The proposed road renovations consist of surface and drainage feature improvements, and along with the culvert replacements proposed for dirt roads, should reduce the probability of sediment delivery from landslides and culvert/fill failures.

Under this alternative, approximately 0.4 mi. of existing road surface in the analysis area would be fully decommissioned (blocked, subsoiled, waterbarred, and seeded), and 3.6 miles of existing road would be blocked and left in a self-maintaining condition. This would increase sediment delivery in the short term, but reduce or eliminate potential sediment delivery from several failing culverts and road fills over the long-term. In addition, the level of compaction within the analysis area would be slightly reduced by the full decommissioning of roads, and recovery of compacted surfaces would be accelerated through the blocking of any other roads.

Some direct effects of road work can be expected. For example, when roads are renovated, constructed, or fully decommissioned, one can expect a subsequent short-term (1-5 years) increase in delivery of suspended fine sediments from road surfaces, road cuts, and ditches, especially where ditches intercept stream channels. In concert, the actions proposed under this alternative would result in a net decrease of open road miles within the analysis area, thereby reducing the long-term sediment delivery potential.

Attempts at quantifying indirect effects of sedimentation from road management activities are rarely successful, because an increase in fine sediment is almost always accompanied by other environmental effects. Although it is well known that increased turbidities from suspended sediments can degrade fish habitat and negatively impact salmonid production, it has not been shown that suspended sediments from surface runoff causes accelerated mortality in juvenile salmonids. There are not likely to be measurable impacts of sediment delivery to fish populations under Alternative II.

Cumulative Effects

Landscape Pattern (Issue 1)

Key Indicator: Habitat connections
The habitat connections adjacent to GFMA can only be assured (to any degree) within the reserve areas. Some GFMA lands are currently not functioning at desired levels, and require time for vegetation to mature. In some cases habitat connections perceived based on preliminary mapping of the Riparian Reserves were determined not to exist after field review. This alternative modifies approximately 1% of the interim Riparian Reserves to GFMA, which is not considered to be detrimental for habitat connections in the analysis area. Adjusting Riparian Reserves is more functional to retaining connections than harvesting additional blocks of habitat as proposed in Alternative III. Under this proposal, deferred units provide some level of habitat connectivity in a key location within the analysis area to meet the intent of the Riparian Reserve evaluation objectives. Other deferred harvest units provide habitat connectivity between functional late-seral habitats in section 1 and allocated LSRs and MMRs throughout the rest of the analysis area.

Key Indicator: Snags and upland down logs
Current deficiencies in hard snags and upland down logs are setting up future shortages in soft snags and upland down logs. Long-term shortages in snags and upland down logs are likely in the analysis area. Bureau of Land Management timber harvest, and the associated mitigation under the current FRMP should increase snag and upland down log availability on limited areas. The design features of this action attempts to meet the minimum requirements of the ROD and the FRMP. Although meeting the minimum resource needs for the analysis area is not expected to occur until one full harvest rotation (regeneration harvest of all potential units) is completed in the analysis area, this action is moving substantially toward meeting that goal.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

Alternative II provides approximately 14.3% of the decadal PSQ commitment for the Resource Area.

Interim Riparian Reserve Boundary Adjustments (Issue 3)

Key Indicator: Surface erosion and mass wasting potential
Same as the no-action alternative.

Key Indicator: LWD recruitment potential
Maturation of Riparian Reserves will generally enhance future LWD recruitment over time. Alternative II would also enhance the recruitment of LWD in overstocked stands less than 40 years of age, by promoting growth and enhancing the quality of trees in this component of the Riparian Reserve.

Key Indicator: Water temperature
Same as the no-action alternative.

Key Indicator: Riparian dependent/associated species

As the federal land agencies begin narrowing intermittent Riparian Reserve widths across the landscape, there are increased risks of impacting botanical and wildlife species of concern by impacting existing populations (since many species are difficult to locate and identify), reducing habitat quality and quantity, and increasing fragmentation. Since this is the first proposal to adjust Riparian Reserve boundaries, the impacts are expected to be minimal to botanical and wildlife species of concern, but as more and more Riparian Reserves are narrowed cumulative impacts increase.

Road Density (Issue 4)

Key Indicator: Open road density
There would be a net decrease in the road density within the analysis area. Additional road closures and road improvements are expected to occur through other management activities such as Job-in-the-Woods. The combined activities further contribute to attaining the target road density. Future timber harvest on BLM-administered lands in the analysis area may offer opportunities to close additional roads, and further decrease road density on public lands.

Key Indicator: Impacts to resources
This alternative is more likely to produce benefits to wildlife than Alternative I. Current road management objectives allow some estimation of impacts to big game, but make it difficult to estimate impacts to furbearers and other groups of wildlife; therefore the analysis of impacts of road management is generalized. It is assumed that closing some roads, will provide some short-term benefits to big game species within 1 to 2 years, provided no vehicle traffic is allowed to occur. In general, this alternative is more likely to provide some benefits to wildlife above the no action, because at least short-term closures will be accomplished on some roads, and there is a net decrease in the number of roads within the watershed.

Cumulative affects of past forest management in the basin have already contributed to the "at risk" status of fish stocks and habitat depletion in the analysis area. Cumulative affects of sediment delivery from surface runoff on local fish populations are unknown.

There would be a 2.6% increase in the “hydrologically unrecovered” condition of the analysis area that would cause annual water yields to be increased over pre-management levels. The recovery trend toward lower yield and more moderate discharges would be delayed by up to five years by implementation of this alternative.

Alternative III - Full Interim Riparian Reserves

Direct and Indirect Effects

Landscape Pattern (Issue 1)

Key Indicator: Habitat connections
This alternative harvests three units (priority 2 & 3 as defined in the watershed analysis) which would be deferred under Alternative II. The additional units would be needed to meet the PSQ target for the analysis area if the Riparian Reserve boundaries were not modified. The harvest of these three additional units is likely to adversely affect the connection of wildlife habitats more than what is expected in Alternative II. Alternative III proposes to harvest Units 33, 34, and 35, while Alternative II defers these harvest units. Unit 33 provides a wildlife habitat connection at a key location within the analysis area in the absence of Riparian Reserve connections (see Riparian Reserve Evaluation in the Sandy-Remote Watershed Analysis). Units 34 and 35 provide habitat connections between functional late-seral habitats in T.29S., R.10W., Section 1 and habitats within allocated LSRs and MMRs throughout the rest of the analysis area. Some of the habitats in the allocated LSRs and MMRs are not currently functional. Harvest of Units 33, 34, and 35 may preclude future recolonization of the stands not fully functional at this time.

Key Indicators: Snag and upland down log availability
Direct and indirect effects are expected to be similar to Alternative II, except the proposed actions will occur on three additional units.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

This alternative would provide an estimated timber volume of 31,527 MBF, which would contribute to the Resource Area's decadal PSQ commitment. Three additional units (totaling approximately 82 acres) would be regeneration harvested, compared to Alternative II, which would eliminate these stands from any other treatment options in the near future.

Interim Riparian Reserve Boundary Adjustments (Issue 3)

Interim Riparian Reserve boundaries would not be adjusted, with the exception of the inclusion of 2 acres of GFMA to meet ACS objectives. Riparian Reserves adjacent to proposed commercial thinning units would be treated (thinned). Because the interim Riparian Reserves are considered to provide a "high level of protection", there should not be any measurable direct or indirect effects on stream temperature, LWD recruitment, riparian dependent/associated species, or the surface erosion and mass wasting potential. This alternative would not affect the development of the 160 year-old age class in the Riparian Reserves.

Road Density (Issue 4)

Key Indicator: Open road density
Same as Alternative II.

Key Indicator: Impacts to resources
Approximately 750' of the proposed new road construction will occur in Riparian Reserves (Unit 24) which is 530' more than Alternative II. The effects to wildlife would most likely be the same as Alternative II. Effects of sediment delivery potential in the analysis area would be the same as Alternative II.

Cumulative Effects

Landscape Pattern (Issue 1)

Key Indicator: Habitat connections
This proposal would retain the full interim Riparian Reserve boundaries on the intermittent streams, and theoretically could provide better connectivity to adjacent watersheds. However, since most of the perceived connections to other watersheds where not substantiated during field review, there is little difference between the action alternatives with respect to habitat connections from one watershed to another.

This alternative would cause a greater rate of change of habitat connections within the analysis area due to the harvesting of additional patches currently functioning as habitat. Alternative III has a greater adverse impact than Alternative II, because it would remove habitats in key locations which are acting as late-seral connectors to allocated LSRs and MMRs. These habitat areas identified as regeneration harvest Units 33, 34, and 35 in Alternative III, should continue to provide habitat connectivity for the next 3 to 4 decades if they were deferred from harvest as proposed in Alternative II.

The effects of this alternative are estimated to be more adverse than those of Alternative I or Alternative II.

Key Indicator: Snags and Upland Down Logs
This alternative is the same or very similar to Alternative II.

Meet Probable Sale Quantity (PSQ) for Myrtlewood Resource Area (Issue 2)

Alternative III provides approximately 14.3% of the decadal PSQ commitment for the Resource Area.

Interim Riparian Reserve Boundary Adjustments (Issue 3)

Same as Alternative I.

Road Density (Issue 4)

Key Indicator: Open road density
Same as Alternative II.

Key Indicator: Impacts to Resources
The cummulative effects to wildlife, fisheries, and the sediment regime would most likely be the same as Alternative II.

Other Environmental Effects

Common to All Action Alternatives

Sensitive Plant Survey and Noxious Weeds

Currently there are no known locations for any federally listed, federal candidate or BLM sensitive plant species within the analysis area. There is no potential habitat for any federally listed or candidate plant species within the analysis area. Habitat for other sensitive plant species is unknown at this time.

Prior to field investigation, aerial photographs of the proposed treatment areas were inspected to determine the potential for habitat of special status species. From these photographs, there appears to be no potential habitat for special status species. To verify this, five units were randomly selected and surveyed. These units were surveyed in late May, early June by Bruce Rittenhouse, District Botanist. No special status plants were located in any of the units that were surveyed (Units 5, 6, 8, 12, and 23). There is very little chance that any potential habitat for any documented or suspected special status plants is present in any of the proposed units. Surveys were conducted by meandering through the units with emphasis on small intermittent drainages. It is estimated that 30-40% of the units were surveyed.

Noxious weeds present within the analysis area include; scotch broom (*Cytisus scoparious*), french broom (*Genista monospessulanus*), tansy ragwort (*Senecio jacobaea*), and St. John's wort (*Hypericum perforatum*). Most of these locations are currently along roads and in disturbed areas. These sites are generally located in the lower portions of the watersheds along the main travel corridors. The Design Features of the action alternatives will help slow the spread of noxious weeds in the analysis area.

Survey and Manage Species

The Northwest Forest Plan/Coos Bay FRMP identified several fungi, plant and animal species for which various levels of management and surveys were prescribed (to be phased in gradually). Complete descriptions of the four strategies (pages C-4) and species lists (Table C-3 page C-49) are presented in the ROD for the Northwest Forest Plan. No locations of Strategy 1 species (Manage Known Sites - July 1995 list) are known to occur in any of the proposed units in the action alternatives. Protocols for surveying Strategy 2 species (Survey prior to ground disturbing activities) have not been developed at this time. Surveys within the known or suspected ranges, and within the habitat types or vegetation communities, must precede the design of ground-disturbing activities to be implemented in 1997. Within this project area, red tree voles are the only Strategy 2 species suspected to occur. Red tree vole protocol will be implemented when finalized. Suspected locations are in proposed Units 4, 5, 6, 9, 15, 18, 24 ,27, and 28. Surveys for other species, such as lichens, bryophytes, and fungi are not required for projects implemented prior to 1999.

Threatened and Endangered Species

The analysis area is within the range of four federally listed T&E species - Northern Spotted Owls, Peregrine Falcons, Bald Eagles, and Marbled Murrelets. No Peregrine Falcons or Bald Eagles have been recently observed in the analysis area; however the area is within their normal range of these species and there is suitable habitat for them. Three Northern Spotted Owl site centers are known to occur within the analysis area. No occupied sites of Marbled Murrelets have been recorded within the analysis area. Formal consultation with the USFWS has been completed and documented in the Biological Opinion for the Fourth Quarter FY 96-98 Timber Sales FY 97-98 O&C Road Use Permits/Tailhold Trees and Fourth Quarter FY 96-2000 Programmatic Projects, Coos Bay District, Bureau of Land Management, dated August 28, 1996.

Marbled Murrelet

Direct, Indirect, and Cumulative Effects

Protocol surveys have been conducted in most of the planning area and no murrelets have been detected. Murrelet survey protocol will be completed on the remainder of the planning area prior to harvest activities; if occupied behavior is detected, units will be dropped or harvest season will be modified as appropriate to comply with the results of consultation with the USFWS. No impacts to murrelets are anticipated.

Northern Spotted Owls

Direct, Indirect, and Cumulative Effects

Regeneration timber harvest would remove suitable nesting, foraging, and dispersal habitat from within the home range of some of these owls. Removal of habitat from within the home range of these owls would exacerbate the critical condition of owls in the planning area and bring the sites closer to inviability. However, the conservation strategy for the Northern Spotted Owl within the Northwest Forest Plan relies primarily on a system of large reserve areas, and viable Owl populations outside these reserves are not necessarily essential for the conservation of the species. Impacts to the conservation of the species

were considered during formal consultation with the USFWS, and it was determined that the action alternatives would not jeopardize the continued existence of Northern Spotted Owls.

Other Species

Direct, Indirect, and Cumulative Effects

No further surveys are planned for Bald Eagles. However, nest search surveys will be conducted on nearby cliffs for Peregrine Falcons to ensure that there is no "Take " of this species.

Special Status Species

Special Status Species found in the analysis area are listed in Section C-2 of the Sandy-Remote Watershed, Wildlife Appendix File (Section F). The design features for the action alternatives should adequately protect the habitats needed for these species and are not expected to have an adverse impact provided that the guidelines of the Northwest Forest Plan are met.

Hazardous Materials/Solid Waste

No hazardous materials have been found at this time in the Action Alternative units. Section K of the Analysis File contains the HazMat review. All Action Alternatives are subject to Federal and State regulatory guidelines for petroleum product use and storage. Spill Prevention, Control and Countermeasure Plans (SPCC) are required under the Oregon Forest Practices Act (Rule OAR 629-57-3600) and by Department of Environmental Quality (Rule OAR 340-108, inclusive). Spill containment capabilities on equipment sites are recommended.

Cultural Resources

Archeological surveys of BLM lands within the Coast Range have located relatively few prehistoric cultural resources, largely because these lands are located on steep, forested slopes rather than on terraces along the major watercourses. Although two village sites, one upland hunting camp, and one isolated artifact (apparently associated with hunting) have been found within this analysis area, none of these are located in the area proposed for management activities.

Many of the known historic resources on upland BLM lands are remnants of early lumbering and homesteading. Prior to the use of trucks, lumbering relied on river transport to deliver logs to the downstream mills. Two splash dams dating from this period are recorded along this portion of the Middle Fork Coquille River. Two cabins (one belonging to John Belieu) and a sawmill are reported in the vicinity of Belieu Creek. A logging camp was located along Sandy Creek, and two steam donkeys and an associated temporary camp were recently found on BLM land in the Sandy Creek drainage. Additional detail on development of this area can be found in the Sandy Creek Watershed Analysis (USDI, 1994). None of these historic resources will be affected by the proposed action alternatives.

American Indian Rights

The Sandy-Remote Analysis Area is within the territory occupied by the Upper Coquille Indians in the past, according to ethnographic information. Today, it still is within the area of interest of the Coquille Indian Tribe. No known impacts on American Indian social, economic or subsistence rights are anticipated because of the proposed actions. Likewise, no impacts are anticipated on the American Indian Religious Freedom Act. However, the Coquille Indian Tribe is being provided the opportunity to evaluate and comment on the proposed actions.

Irreversible and Irretrievable Commitment of Resources

Some irreversible and irretrievable commitment of resources would result from the proposed actions. Crushed rock from quarries would be committed to reconstruction and construction of the road system. Energy used to grow, manage, and harvest trees, and in other management activities is generally irretrievable. Irreversible and irretrievable commitments as stated above are discussed in the Coos Bay District FRMP.

V. LIST OF PREPARERS

The following is a list of the Sandy-Remote Analysis Area Interdisciplinary Team members:

Core ID Team Members

Michael S. Kellett	Fisheries
Jim Kowalick	Silviculture
Steve Langenstein	Wildlife Biologist
J. Michael Oxford	Forester/Team Lead

Other Contributors:

Dan Carpenter	Hydrologist
Jay Flora	GIS/ARD Coordinator
Steve Fowler	Landscape Planner
Jim Heaney	T&E Wildlife
Nick Jansen	Fuels Management
Paul Leman	Forester
Bruce Rittenhouse	Botanist
Stephan Samuels	Archeologist
Rod Smith	Engineering
Dale Stewart	Soils Scientist
Timothy Votaw	Environmental Protection Specialist

VI. LIST OF AGENCIES AND PERSONS CONSULTED

U.S. Fish and Wildlife Service
Oregon State Office
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Portland, OR 97266

Appendix

Table of Contents

Appendix 1

Harvest Unit Details

Sandy - Remote Analysis Area EA
Alternative II - Proposed Action

Unit #	Photo #	Legal	Total Acres	Volume/Acre MBF	Total Volume MBF	Treatment	Harvest System	FOI Symbol	TPCC
1	39A-32	29-10-11	38	6	228	Com. Thin	Skyline	D2-=1967	NP
2	37A-17	28-10-34	16	50	800	Regen	Heli/Skyline	D4-=1850	FGR1/RLR
3	37A-17	28-10-34	26	60	1,560	Regen	Heli/Skyline	D4-=1860	FGR2, FGR2, RLR
4	37A-17	28-10-34	27	55	1,485	Regen	Skyline	D4-=1860	NP
5	37A-16	29-10-3	9	50	450	Regen	Skyline	D4-=1860	RLR
6	37A-16	29-10-3	8	55	440	Regen	Skyline	D4-=1860	NP
7	37A-16	29-10-3	25	55	1,375	Regen	Skyline	D4-=1860	NP
8	37A-16	29-10-3	8	45	360	Regen	Skyline	D4-=1860	RLR
9	37A-16	29-10-3	43	62	2,666	Regen	Skyline	D4-=1860	NP
10	37A-16	29-10-3	23	53	1,219	Regen	Skyline	D4-=1860	RLR
11	36A-12	29-10-9	47	55	2,585	Regen	Skyline	D4-=1880	FGR1/RLR1
12	36A-12	29-10-9	41	35	1,435	Regen	Skyline	D4-=1880	RLR
13	36A-12	29-10-16	23	65	1,495	Regen	Skyline	D4-=1880	RLR
15	37A-12	29-10-15	16	35	560	Regen	Heli/Skyline	D4-=1870	FGR1, RLR
16	36A-7	29-10-28	93	20	1,860	Regen	Skyline	D4=1890	RLR1
17	35A-11	29-10-17	21	6	126	Com. Thin	Skyline	D2-=1963	FGR1, FGR2
18	35A-11	29-10-17	18	50	900	Regen	Skyline	D4-=1880	FGR1/RLR, RLR1
19	35A-11	29-10-20	23	11	253	Com. Thin	Skyline	D2=1960	FGR2/RLR, RLR
20	35A-11	29-10-20	21	14	294	Com. Thin	Skyline	D2=1960	FGNW, FGR2, FGR1
22	34A-12	29-10-18	37	50	1,850	Regen	Skyline	D4-=1900	FGR1/RLR, RLR
23	33A-11	29-11-25	11	45	495	Regen	Skyline	D4=1860	FGR1/RLR
24	33A-11	29-11-25	30	12	360	Com. Thin	Skyline	D3-=1950	RLR
25	34A-6	30-10-6	12	60	720	Regen	Skyline	D4-=1890	RLR
26	34A-6	30-10-6	9	35	315	Regen	Skyline	D4-=1890	FGR1/RLR, RLR
27	34A-6	30-10-6	12	45	540	Regen	Skyline	D4-=1890	FGR1/RLR, RLR
28	34A-5	30-10-6/7	91	60	5,460	Regen	Skyline	D4-=1890	FGR2, FGR1, RLR
29	34A-5	30-10-7	18	55	990	Regen	Helicopter	D4-=1860	FGR2/RLR
30	35A-5	30-10-5	7	35	245	Regen	Skyline	D4-=1880	RLR
18a*	35A-12	29-10-17	8	65	520	Regen	Helicopter	D4-=1880	FGR1/RLR, RLR1
		Totals:	761		31,586				

* New units added during the EA process.

Sandy - Remote Analysis Area EA
Alternative II - Proposed Action

Unit #	Road Renov. Gravel/Dirt (Stations)	Road Improvement (Stations)	New Road Construction (Stations)	Comments
1	42	0	3	Plus roadside landings
2	80	0	7.5	2 landings; 1 helicopter
3	0	0	6	(TPCC withdrawn~ 2 acres)
4	0	0	9	Plus 2 roadside landings
5	14	0	0	1 roadside landing & 1 existing landing
6	0	35	0	Improvement -dirt (Approx. 2 acre wildtree block - north portion)
7	71.5	0	0	4 roadside landings
8	9	0	5	
9	4.5	0	17	NC - Rock; Plus 1 existing & 2 roadside landings
10	0	0	3	Plus 2 roadside landings
11	40	0	6	Plus 2 roadside landings
12	16	10	0	Improvemet - dirt; plus 4 roadside landings
13	69.5	0	6.5	
15	92.5	0	0	
16	160	0	45	Crossing Plat needed
17	199	0	9	Treat 25 acres
18	7	0	0	1 roadside landing
19	0	0	0	Treating 35 acres
20	0	0	9	Treating 24 acres
22	175	0	13	NC - Dirt (Approx. 3-4 acre wildlife tree block in NW corner)
23	190	0	1.5	Plus 1 roadside landing
24	75	0	46	Ground base ~ 6 acres; Treat 36 acres plus 6 acres Red Alder Conversion
25	156	0	2	Plus 3 roadside landings
26	0	0	0	2 roadside landings
27	0	0	0	2 roadside landings
28	102	0	23	Plus 1 existing & 2 roadside landings
29	0	0	0	
30	95	0	0	Plus 3 roadside landings
18a*	3	0	0	
Totals:	1,601	45	211.5	

* New units added during the EA process.

Sandy - Remote Analysis Area EA
Alternative III - Full Interim Riparian Reserves

Unit #	Photo #	Legal	Total Acres	Volume/Acre MBF	Total Volume MBF	Treatment	Harvest System	FOI Symbol	TPCC
1	39A-32	29-10-11	38	6	228	Com. Thin	Skyline	D2-=1967	NP
2	37A-17	28-10-34	13	50	650	Regen	Heli/Skyline	D4-=1850	FGR1/RLR
3	37A-17	28-10-34	25	60	1,500	Regen	Heli/Skyline	D4-=1860	FGR2, FGR2, RLR
4	37A-17	28-10-34	24	55	1,320	Regen	Skyline	D4-=1860	NP
5	37A-16	29-10-3	9	50	450	Regen	Skyline	D4-=1860	RLR
6	37A-16	29-10-3	5	55	275	Regen	Skyline	D4-=1860	NP
7	37A-16	29-10-3	19	55	1,045	Regen	Skyline	D4-=1860	NP
8	37A-16	29-10-3	7	45	315	Regen	Skyline	D4-=1860	RLR
9	37A-16	29-10-3	31	62	1,922	Regen	Skyline	D4-=1860	NP
10	37A-16	29-10-3	18	53	954	Regen	Skyline	D4-=1860	RLR
11	36A-12	29-10-9	47	55	2,585	Regen	Skyline	D4-=1880	FGR1/RLR1
12	36A-12	29-10-9	31	35	1,085	Regen	Skyline	D4-=1880	RLR
13	36A-12	29-10-16	23	65	1,495	Regen	Skyline	D4-=1880	RLR
15	37A-12	29-10-15	16	35	560	Regen	Heli/Skyline	D4-=1870	FGR1, RLR
16	36A-7	29-10-28	80	20	1,600	Regen	Skyline	D4=1890	RLR1
17	35A-11	29-10-17	21	6	126	Com. Thin	Skyline	D2-=1963	FGR1, FGR2
18	35A-11	29-10-17	17	50	850	Regen	Skyline	D4-=1880	FGR1/RLR, RLR1
19	35A-11	29-10-20	23	11	253	Com. Thin	Skyline	D2=1960	FGR2/RLR, RLR
20	35A-11	29-10-20	21	14	294	Com. Thin	Skyline	D2=1960	FGNW, FGR2, FGR1
22	34A-12	29-10-18	33	50	1,650	Regen	Skyline	D4-=1900	FGR1/RLR, RLR
23	33A-11	29-11-25	11	45	495	Regen	Skyline	D4=1860	FGR1/RLR
24	33A-11	29-11-25	25	12	300	Com. Thin	Skyline	D3-=1950	RLR
25	34A-6	30-10-6	10	60	600	Regen	Skyline	D4-=1890	RLR
26	34A-6	30-10-6	9	35	315	Regen	Skyline	D4-=1890	FGR1/RLR, RLR
27	34A-6	30-10-6	12	45	540	Regen	Skyline	D4-=1890	FGR1/RLR, RLR
28	34A-5	30-10-6/7	86	60	5,160	Regen	Skyline	D4-=1890	FGR2, FGR1, RLR
29	34A-5	30-10-7	18	55	990	Regen	Helicopter	D4-=1860	FGR2/RLR
30	35A-5	30-10-5	7	35	245	Regen	Skyline	D4-=1880	RLR
33	37A-16	29-10-3	32	50	1,600	Regen	Skyline	D4-=1860	RLR, NP
34	37A-12	29-10-16	25	50	1,250	Regen	Skyline	D4-=1870	FGR1/RLR, RLR, NP
35	37A-12	29-10-15	25	35	875	Regen	Skyline	D4=1860, D4-=1870	FGR1/RLR, RLR
		Totals:	761		31,527				

Sandy - Remote Analysis Area EA

Alternative III - Full Interim Riparian Reserves

Unit #	Road Renov. Gravel/Dirt (Stations)	Road Improvement (Stations)	New Road Construction (Stations)	Comments
1	42	0	3	Plus roadside landings
2	80	0	7.5	2 landings; 1 helicopter
3	0	0	6	(TPCC withdrawn~ 2 acres)
4	0	0	9	Plus 2 roadside landings
5	14	0	0	1 roadside landing & 1 existing landing
6	0	35	0	Improvement -dirt (Aprox. 1 acre wildlife tree block - north portion)
7	71.5	0	0	4 roadside landings
8	9	0	5	
9	4.5	0	12	NC - Rock; Plus 1 existing & 4 roadside landings
10	0	0	3	Plus 1 roadside landings
11	40	0	6	Plus 2 roadside landings
12	16	10	0	Improvemet - dirt; plus 2 roadside landings
13	69.5	0	6.5	
15	92.5	0	0	
16	160	0	45	Crossing Plat needed
17	199	0	9	Treat 25 acres
18	7	0	0	1 roadside landing
19	0	0	0	Treating 35 acres
20	0	0	9	Treating 24 acres
22	175	0	13	NC - Dirt (Approx. 3-4 acre wildlife tree block in NW corner)
23	190	0	1.5	Plus 1 roadside landing
24	75	0	46	Ground base ~ 6 acres; Treat 36 acres plus 6 acres Red Alder Conversion
25	156	0	2	Plus 2 roadside landings
26	0	0	0	2 roadside landings
27	0	0	0	2 roadside landings
28	102	0	23	Plus 1 existing & 2 roadside landings
29	0	0	0	
30	95	0	0	Plus 3 roadside landings
33	34	0	5	Plus roadside landings
34	25	0	0	Plus 1 roadside landing
35	0	0	0	4 roadside landings
Totals:	1,657	45	211.5	

Appendix 2

Road Closure Recommendations

Sandy-Remote Analysis Area EA
Road Closure Recommendations

The following propsed actions will be accomplished under timber sales covered by this EA and are common to both Action Alternatives. The recommendation to close these roads came from the Transportation Management Objectives developed in the Sandy_Remote Watershed Analysis.

Road No.	Miles Decom.	Miles Temp. Closed	Remarks	Management Objectives *
29-10-17.0 A1	0.26	0.18	Block at junction with -17.1 & decommission.	1, 2
29-10-17.0 A2	0.38	0	Subsoil and seed; check this out.	1, 2
29-10-17.1	0	0.41	Closed by action for -29.0 road.	1, 4
29-10-20.0	0.18	0	Block and decommision; check w/ GP 1st.	1, 4
29-10-29.0	0	3.85	Place gate at junction w/ Hiway 42.	1, 4, 6
29-10-31.1	0.21	0	Block and decommission.	2, 4, 5
30-10-5.2	0.43	0	Block & decommission; pull stream x-ings.	2, 3
30-10-6.1	0.44	0	Block with guard rail and decommission.	4, 5
30-10-6.2	0.41	0	Blocked with action for -6.1 rd., decommissior	4
29-10-2.2 B	-	-	Reblock with guardrail at junction with -3.1 rd.	1, 2, 4
29-10-9.4	0.6	0	Block and decommission.	2, 4
29-10-9.6	-	-	Reblock and decommission.	4
29-10-15.1	0.26	0	Block at junction w/ 15.3 & decommission.	1, 4
29-10-15.3	-	-	Reblock and decommission.	1, 4
29-10-16.0	0.4	0	Block with guard rail and decommission.	1
29-10-16.1	0.39	0	Block and decommission.	1
29-10-21.2 A	-	-	Reblock with gate (sign).	4, 7
Totals:	3.96	4.44		

Decom. = Decommission (Block and left in condition to self maintain)
Temp. Closed = Temporarily Closed (Roads blocked with a gate)

* 1 = Wildlife, 2 = Aquatic Conservation Strategy, 3 = Fisheries, 4 = Road Density,
5 = Noxious Weeds and/or P.O.C. control, 6 = Control illegal dumping,
7 = Conditions set in R/W Agreement.

Current Open Road Density North of Hiway 42: 3.21
New Open Road Density North of Hiway 42: 2.75

Current Open Road Density South of Hiway 42: 2.50
New Open Road Density South of Hiway 42: 2.15